

Amendments to the Claims

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (previously amended) A biopsy device comprising:
a hollow biopsy needle having a tissue receiving port;
a hollow cutter advanceable within the biopsy needle to sever tissue received within the tissue receiving port, wherein the cutter has a sidewall surrounding an interior, wherein the cutter has a plurality of holes spaced from the distal end of the cutter, wherein the plurality of holes are formed transversely through the sidewall of the cutter for providing fluid communication from a region exterior to the sidewall of the cutter to the interior of the cutter, and wherein the holes are positioned for providing vacuum axially through the cutter when multiple tissue samples are disposed within the sample tube within the cutter; and
a sample tube advanceable within the hollow cutter, the sample tube having an open distal end sized for receiving a tissue sample severed by the hollow cutter the sample tube being releasably supported on the biopsy device such that the sample tube and at least one tissue sample stored therein may be removed from the biopsy device without disassembling the biopsy device, and wherein the sample tube comprises a vacuum lumen and a sample lumen, and wherein the vacuum lumen extends along side of at least a portion of the sample lumen.
2. (previously presented) The biopsy device of Claim 1 wherein the sample tube is adapted to store multiple samples in an end to end configuration.
3. (original) The biopsy device of Claim 1 comprising a vacuum source in communication with the sample tube.
4. (original) The biopsy device of Claim 1 wherein the sample tube is advanced by fluid pressure.

5. (original) The biopsy device of Claim 1 wherein the sample tube is advanced pneumatically.

6. (original) The biopsy device of Claim 1 comprising a piston operatively associated with the sample tube.

7. (original) The biopsy device of Claim 1 comprising apparatus for advancing and retracting the cutter within the biopsy needle.

8. (previously presented) The biopsy device of Claim 7 comprising apparatus for advancing and retracting the sample tube within the cutter.

9. (original) The device of Claim 1 wherein the hollow needle comprises a lateral tissue receiving port spaced from the distal end of the needle.

10. (canceled)

11. (original) The device of Claim 1 wherein the sample tube comprises a tube wall feature for retaining tissue samples.

12. (original) The device of Claim 11 wherein the tube wall feature comprises a notch disposed adjacent the distal end of the sample tube.

13. (original) The biopsy device of Claim 1 comprising a rotating journal for rotating and advancing the cutter.

14. (canceled)

15. (canceled)

16. (previously amended) A biopsy device comprising:

a hollow biopsy needle having a closed distal end and a lateral tissue receiving port spaced proximally of the closed distal end;

a hollow cutter having an open distal end, a lumen extending proximally from the open distal end, and a plurality of holes extending through a wall of the cutter; and the cutter advanceable within the biopsy needle to sever tissue received within the tissue receiving port;

a sample tube having an open distal end defining a distal opening, the sample tube being releasably supported on the biopsy device, and the sample tube advanceable within the cutter;

a drive mechanism for advancing and rotating the cutter within the biopsy needle, and

a sample tube advancement assembly, wherein the sample tube advancement assembly is operable to advance the sample tube distally within the cutter to store a tissue sample within the sample tube after the cutter has been advanced within the needle to sever the tissue sample; wherein the sample tube comprises a vacuum lumen and a sample lumen, and wherein the vacuum lumen extends along side of at least a portion of the sample lumen.

17. (currently amended) A method of obtaining a tissue sample comprising the steps of:

drawing tissue into a side tissue receiving port of a hollow biopsy needle;

advancing a hollow cutter in the needle to sever a tissue sample and to encapsulate the severed tissue sample within the cutter upon reaching a distal most position, wherein the cutter closes the tissue receiving port when the cutter is at the distal most position;

advancing a hollow sample tube in the cutter to position the tissue sample in the sample tube, wherein the hollow sample tube has an open distal end, wherein the open distal end comprises a distally facing opening defined by the distal most perimeter of the open distal end, wherein the tissue sample is axially received in the hollow sample tube through the opening at the open distal end of the hollow sample tube during the act of

advancing the hollow sample tube, wherein at least a portion of the act of advancing the hollow sample tube is performed after the cutter has reached the distalmost position and after the cutter has encapsulated the severed tissue sample; and wherein the sample tube comprises a vacuum lumen and a sample lumen, wherein the vacuum lumen extends along side of at least a portion of the sample lumen;
and wherein the method comprises providing vacuum to the sample tube vacuum lumen.

18. (currently amended) The method of Claim 17 comprising stacking multiple samples within the sample tube in an end to end configuration along a length of the tube.

19. (original) The method of Claim 17 comprising providing a vacuum through the sample tube.

20. (original) The method of Claim 17 comprising providing axial vacuum in the cutter with at least one sample disposed in the sample tube.

21. (Previously presented) The biopsy device of claim 16, wherein the sample tube advancement assembly comprises a vacuum chamber and a floating piston.

22. (Previously presented) The method of claim 17, wherein the sample tube remains stationary during the act of advancing the hollow cutter.

23. (new) A biopsy device comprising:

A needle assembly comprising a hollow biopsy needle having a closed distal end having a tissue piercing tip and a side tissue receiving port spaced proximally of the closed distal end, a cutter lumen, and a vacuum lumen, and wherein the needle comprises an axially extending slot positioned proximal of the side tissue receiving port, the axially extending slot communicating between the cutter lumen and the vacuum lumen;

a hollow cutter advanceable within the biopsy needle to sever tissue received within the tissue receiving port, wherein the cutter has a sidewall surrounding an interior,

wherein the cutter has an open distal end and a plurality of holes spaced from the distal end of the cutter, wherein the plurality of holes are formed transversely through the sidewall of the cutter for providing fluid communication from a region exterior to the sidewall of the cutter to the interior of the cutter; and

a sample tube advanceable within the hollow cutter, the sample tube having an open distal end sized for receiving a tissue sample severed by the hollow cutter the sample tube being releasably supported on the biopsy device such that the sample tube and at least one tissue sample stored therein may be removed from the biopsy device without disassembling the biopsy device; and

a vacuum source operable to communicate vacuum through the sample tube.